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# The Effects of Age & Education on Personality Consistency

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Sparks,  
Craig W.  
1983

THE EFFECTS OF AGE AND EDUCATION  
ON PERSONALITY CONSISTENCY

A Thesis  
Presented to  
The Faculty of the Department of Psychology  
Western Kentucky University  
Bowling Green, Kentucky

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts

by  
Craig W. Sparks  
May 1983

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ON PERSONALITY CONSISTENCY

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THE EFFECTS OF AGE AND EDUCATION  
ON PERSONALITY CONSISTENCY

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This study attempts to determine the influence of age and education on the consistency of one's responses to items on various personality inventories. It was hypothesized that with increased age and education, people develop more stable and coherent personality structures. This results in more internally consistent responses to the personality measures used in this study (e.g., the Marlowe-Crowne Social Desirability Scale, the Dogmatism Scale, and the Private Self-Consciousness Scale). Alpha reliabilities showed that only three of the eight scales gave a positive relationship between age and internal consistency, while only two of the eight scales were supportive of a positive relationship between education and internal consistency. Possible moderators of the age or education and internal consistency relationship, such as sentence difficulty, words not understood, and self-reflection, were found to have no influence on the relationship. The correlations between both age and education with internal consistency were moderate in strength,  $r = .23$  and  $r = .37$ , respectively. When the mean standard deviations for each age or education group on each personality scale were analyzed by one-way ANOVA's, most of the scales showed significant group differences with the older and more educated subjects showing more consistency in their responses.

## Introduction

Over the years, many studies have examined the correlations of age and education with personality and with personality change. However, most of the attention has focused on group mean test scores using various personality measures and the correlations between these scores with particular levels of age or education. Nevertheless, by using these personality measures in this way, the potentially influencing effects of age and education on the logical consistency of people's responses to statements on personality measures are usually overlooked. What the author hopes to show in this study is that the internal consistency of personality measures, or the degree of consistency in which subjects respond to test items, improves significantly as age and education increase.

A possible explanation for this relationship is that subjects who are younger and less educated are indecisive concerning their opinions, attitudes, and values while they are in the process of building their self-image. As one grows older and becomes more educated, however, one's self-image becomes more internally consistent and more stable. This process should result in more consistent and reliable measures of personality for older and more educated people.

### Potential Importance of This Study

There are at least three areas in which the proposed relationship of age and education with personality measure consistency could have an important influence. The first area has been highlighted in a recent article concerning the trend of social psychology and personality research by Higbee, Millard, and Folkman (1982). This study showed that the average number of studies using college students in 1979 was 70% (an increase over the 1969 figure of 61%). The number of children and adolescents used comprised 8% of the studies, while adults were used only 18% of the time.

The author conducted his own informal survey by using the articles which appeared in the 1980 and 1981 issues of the Journal of Personality. College students were used in 66% of the studies, while the number of children and adolescents made up 14% of the research, and adults were used only 10% of the time. When it is considered that freshmen and sophmores are most commonly used in college studies, it becomes evident that the large majority of current research uses subjects who are under 21 years of age. If these subjects have lower internal consistencies in their responses on personality measures than do older or more educated subjects, the results of many studies using these measures may need to be re-evaluated in terms of the effects of this lack of consistency (i.e. lower reliability) on a sample of subjects at a certain age or education level.

The second area of importance for this study is in regard to the work of Walter Mischel and his belief in the



situational specificity of human behavior. In his book Personality and Assessment (1968) Mischel documents much past research which supports his view that there is little evidence for the existence of general enduring personality traits. Though Mischel cited many studies which supported his notion of the individual inconsistencies of such dimensions as moral behavior, dependency, and aggression, nearly all of the studies used children and adolescents. For example, the key study used by Mischel to represent moral behavior was the lengthy, seminal research by Hartshorne and May (1928, 1929) and Hartshorne, May, and Shuttlesworth (1930). They found that behaviors such as honesty, charity, and cooperation were not only "particular habits rather than general traits" (Hartshorne, May, and Shuttlesworth, 1930, p. 287), but also had average intercorrelations among themselves of almost zero. This was interpreted as a strong indication for the lack of a consistent pattern of moral behavior among the sample of 5th to 8th grade children. The researchers eventually found further support for this lack of consistency when they computed the average intercorrelation of the 21 various tests of honesty for the children to be only .16. Hartshorne et al. summed up their research with a doctrine of specificity which stated

The behavior of a child in the face of temptation to deceive is conditioned primarily by all the manifold details of the total situation. The consistency of his behavior is a function of the potent similarity of all the elements in



the situations in which he is placed. The 21 measures of honesty which we have employed involve changes in the method of deception, changes in the nature of the test material, and radical changes in the gross external situation. Under these conditions there is found to be little consistency of behavior. This conclusion holds for children in general (p. 308).

It seems possible that the results of this work, and the theory of the situational specificity of personality characteristics which hinges upon it, could be accounted for, in part, by the lack of consistent moral values within children who are still developing their own set of concrete attitudes, beliefs, and values.

Mischel's broad condemnation of the generality of personality traits has been questioned by many researchers who have attacked this issue from different perspectives. A brief statement concerning the basic idea behind five such studies should help put the present investigation in a clearer context.

Most of the research attacks on Mischel's situationism are variations of the interactionist position which holds that knowledge of both the characteristics of the subject and the situation in which the subject is located are critical in predicting the consistency of the subject's behavior. In one approach, Monson, Hesley, and Chernick (1982) found evidence for a moderating effect of situational constraint upon the predictability of one's behavior in a given setting.

Stronger constraints tend to decrease the variance in the behavior shown by different people, thereby limiting the individual differences needed to predict behavior by a personality trait. However, when the situational constraints are weak, greater variance in behavior will occur, allowing the relative position of a given person on a dimension to more strongly predict behavior. Mischel himself has lent support to this theory of behavior predictability across limited situations (Mischel, 1977).

In a second approach, Lord (1982) proposed that before discussing the consistency or inconsistency of behavior across situations, it is necessary to assess whether or not the situations are judged to be similar by an individual. He instructed each subject to make their own assessments concerning the perceived similarity among various pairs of situations involving conscientiousness. Several idiographic methods of assessing situation similarities, based on the template matching technique, showed a strong relationship between a subject's own perceptions concerning the amount of similarity in pairs of situations and the consistency of their actual behavior in those specific situations, thus suggesting that behavioral consistency can be predicted across situations which a person judges to be similar.

In a third approach, Bem and Allen (1974) explain the low cross-situational consistency of the behavior of a sample of subjects on a trait dimension by showing that a given trait is not seen as relevant, or important, to every person in guiding one's behavior. Bem and Allen were able to

identify individuals who were cross-situationally consistent on the traits of friendliness and conscientiousness by having each person self-report the degree of consistency which he or she displays across situations. In essence, the researchers found that only certain people are predictable on a given trait, while others may be consistent on quite different traits.

A fourth approach, by Parker (1971), is similar to Bem and Allen in that both studies categorize people into groups of high and low stability. Parker gave the Gough Adjective Checklist to a group of undergraduates on three separate occasions. The average variance of the three scale scores for each subject was used as that person's index of stability. This index was used to group people into high and low-stability categories. Parker found that the high-stability people tended to choose favorable self-descriptive adjectives, while low-stability people tended to choose unfavorable self-descriptive adjectives. Parker suggested that these results indicated that well-adjusted people describe themselves in a more stable and consistent manner than people with more inner-conflict.

The final counterpoint to Mischel is by Epstein (1980), who explained Mischel's results by noting that the prediction of behavior based upon a single situation is very unreliable since many influences may affect one's behavior in a single behavioral setting. Epstein found that a subject's response to a single behavioral event "produced low-stability coefficients, usually below .30. As the data were averaged over



an increasing number of events, stability coefficients rose, often to over .80 and sometimes to over .90" (p. 792-793). Therefore, predictions of behavior from personality should be used, averaged over a number of behaviors for more accurate results.

The author of the present study believes that an important set of variables have been overlooked by this interactionist approach. It may be that the age and education level of an individual moderates the consistency of one's response on a given trait, thereby causing the "illusion" of specificity when younger or less educated people are used as subjects.

At this point, an important aspect of this proposed relationship between age and education with internal consistency should be noted. The results of Parker's study stresses the point that not everyone develops their personality consistency to the same degree at each age. For example, by the age of 22 years, everyone should not be expected to have obtained an exact amount of internal consistency. Within each age group, there will be people of higher and lower stability. However, the general trend across age groups will be an increase in stability.

The third area of importance for this study concerns a variety of studies in which age or education differences in the ability of personality to predict behaviors have been shown. Low personality consistency in younger and less educated subjects will lower a correlation between the personality measure with any behavior being studied. One example



is a recent study of the intrapersonal correlates of cigarette smoking (Grube, Rokeach, Weir, and Getzlaf, note 1). A number of different age groups (ranging from a junior high school sample of 11 to 17 year olds to an older adult sample of 55 to 88 year olds) indicated whether or not they smoked cigarettes, completed the Rokeach Value Survey, and answered several questions concerning their attitude toward smoking. The results showed that the "personal attitudes and values were unimportant correlates (with smoking) among young people but increased with age" (p. 1). In other words, the subjects' values were poor at predicting cigarette smoking in younger age groups but were increasingly effective predictors for older age groups. A possible explanation for these results, not considered by Grube et al., is that the inconsistency of the younger subject's responses caused a low correlation between the value measures used and cigarette smoking. The older groups had established more stable value or belief systems, which resulted in higher correlations. Unfortunately, this study confounds the effects of age and education on personality consistency. The author believes that the study to be presented will allow a separate analysis of the influence of the two factors on the consistency of subjects' responses on personality measures.

#### Indirect Evidence Supporting The Present Thesis

No study has directly set out to determine the consistency of personality responses in relation to the age and education of the subjects. There is, however, some limited and indirect support for the thesis in past research. In a

study on the development of students in college, D. H. Heath (1968) gave a number of measures of student development (e.g. Allport's Study of Values, Strong Vocational Interest Blank, Preceived-Self Questionnaire) to a sample of students during their first week of college. Some students retook the test at the end of their freshman year, and the rest retook the test at the end of their senior year. Heath's primary purpose in this study was in collecting empirical support for his theory of the development of maturity. One aspect of the theory involves the integration and stabilization of one's personality. The results showed significantly greater integration among seniors than in freshmen in a number of ways. Seniors felt less torn by conflicting values, and less inconsistent and contradictory. Seniors also had developed greater stability in their beliefs and values since their freshmen year. The freshmen's greater uncertainty about their ideas when they were challenged showed the lack of a stable belief system. An important assumption in Heath's maturation development theory is the increased consistency of students' personality with age. However, it should be noted that education remains confounded with age in Heath's analysis of college students.

#### Test-Retest Reliability

There are several ways in which one can obtain evidence concerning the consistency of a group of subject's scores. One such method is the computing of test-retest reliabilities for scores obtained over a specific time period. Shorter time intervals (e.g. two weeks) indicate the

reliability of the instrument being used. Longer time intervals (e.g. one year) indicate the presence of any behavioral changes in the subjects during that time period.

One major concern with studies such as Heath's and the others which follow is the reliability of the measures used in test-retest situations. In regard to the Heath study, are the differences between the freshmen and senior samples due to real changes in consistency and integration or due to the low reliabilities of the personality measures used? Heath gave no reliability figures and referred only to the Preceived-Self Questionnaire, in which he stated that "the pattern of the internal relationships between the scores indexing the maturity of different self-structures and dimensions was remarkably similar for all of the samples" (p. 286). For our purposes, the results obtained by Heath will be considered accurate due to his use of several other popular measures with well-documented reliabilities and due to his general agreement with the findings of many other studies dealing with college student personality development (Heath, 1968).

The next several college studies use test-retest correlations as evidence for personality changes which the author believes may be due to changes in the consistency of students during their college years. Webster (1958) constructed a measure called The Developmental Scale, which consisted of various personality inventory items which discriminated graduating seniors from entering freshmen. The reliability of the scale was determined by testing a



group of students twice as freshmen and twice more as seniors (i.e., test-retest correlations). The results for the students as freshmen and as seniors was .82 and .86, respectively, indicating that the measure was reliable, slightly more so for seniors. However, the test-retest correlations for the students during the four-year period between their freshmen and senior years was only .67, indicating that the students had undergone a significant amount of personality change since their freshmen year.

Stewart (1964) gave the Strong Vocational Interest Blank, the Omnibus Personality Inventory, and the Allport-Vernon-Lindzey Study of Values, to a sample of students as freshmen and as seniors in an effort to assess changes in personality test scores. Of the 28 subscales, 21 had test-retest correlations below .60, and 9 of these correlations were below .50. Once again, an increase in the consistency of one's responses toward attitudes, values, and beliefs during the time between test periods could be an important explanation for these low correlations. Stewart examined an alternative explanation for these results by looking for any changes in the factor structure of the instruments over the four-year time period through the use of canonical correlation. The results showed similar factor loadings for each scale over the time interval, indicating that the low correlations were not the result of a change in the underlying meanings of the scales during the four-year period. Nichols (1967) also conducted a four-year longitudinal study with college students, using instruments such as the 16 Personality



Factor Questionnaire and the Holland Vocational Preference Inventory. Of the 76 separate subscale test-retest correlations for males (freshmen versus seniors) and females (freshmen versus seniors), 49 were below .50 and 25 of these were below .40. Once again, reliability estimates of the tests themselves were not available but shorter term test-retest correlations (from six days to six weeks) were given for some subscales. Nearly all of the correlations were above .70. These correlations serve to highlight the fact that over the longer time period some important behavioral changes emerged more clearly for college students. These changes may be due to the increasing consistency of the subject's responses to items of similar values and attitudes as they move from their freshmen to their senior years.

Other studies have included high school students in assessing the reliability of a personality measure. This allows one to look at the development of consistency in the people's responses over a longer time period. Rokeach's Value Survey (Form D) was given to a sample of 7th, 9th, and 11th grade students, as well as a group of college students, and was then retaken three weeks later. The retest correlations steadily increased from .62 for the 7th grade students to .78 for the college students (Rokeach, 1960). This positive relationship between the retest correlations and the grade level of the subjects provides further indirect evidence concerning the increased consistency of responses on personality inventories with the increased education of the subjects.

The use of test-retest reliabilities for various

self-report measures have revealed two important considerations when one assesses the stability of an instrument. The first is the initial test ages of the subjects, and the second is the amount of time allowed between tests. Johansson and Campbell (1971) used these considerations while evaluating the stability of the Strong Vocational Interest Blank (SVIB). By using their own set of subjects, as well as some samples used by Strong (1955), the researchers were able to collect a large number of test-retest correlations in which the initial test ages varied between 16 and over 26 years of age, while the test-retest intervals varied from two weeks to 23 years. Johansson and Campbell found that when a given test-retest interval was held constant, the test-retest reliability of the SVIB was higher as the initial age of the subjects was increased. This fits neatly into our hypothesis of consistency. An example, based upon the actual data in the Johansson and Campbell study, may make this clearer. A sample of 16 year olds (Group A) and a sample of 23 year olds (Group B) took the SVIB and then took it again 11 years later. Group A had a test-retest correlation of .64, while Group B a correlation of .75. Group A's correlation may have been lower because their initial test was taken during a time when they were still quite inconsistent in the way they responded to items dealing with similar or related beliefs and attitudes. By the time of the retest, their responses had become far more consistent. The result is a low correlation between test responses for the two time periods.

### Internal Consistency

Another way of assessing the consistency of a group of subjects' scores involves measurements of internal consistency. This approach focuses on the amount of correlation between the item responses within one test. The Kuder-Richardson KR-20 was used in computing the internal consistency of scores on the Coopersmith Self-Esteem Inventory for a sample of 5th, 9th, and 12th grade students (Spatz and Johnston, 1973). The results showed the 5th graders with a coefficient of .81, the 9th graders with a coefficient of .86, and the 12th graders with a coefficient of .80. This is contrary to our hypothesis of consistency since it would be expected that the 5th graders would be lower in consistency, with an increase in the KR-20 coefficient for the higher grades.<sup>1</sup>

Bishop, Hamilton, and McConahay (1980) addressed their research toward finding a reason for the inconsistent way in which less educated people respond to items which reflect similar beliefs or attitudes. The study was based on Converse's work concerning the attitudes of the "mass" public (Converse, 1964, 1970, 1975). Converse states that most people with lower levels of education tend to hold isolated attitudes on issues which are logically related (i.e., a lack of consistency) and that their attitudes are unstable over time. Bishop et al. gave an attitude questionnaire in a test-retest situation to a sample of college and non-college educated adults in order to assess the stability of items and the degree of constaint of various issues over time. The



results showed that both groups of adults maintained stable attitudes concerning the various issues addressed over the 9 to 11-month time interval. In other words, adults from both groups generally held the same attitudes during the retest time period as they had during the initial time period.

However, the college educated adults showed a significant degree of interrelatedness or consistency between attitudes, while the non-college educated group showed no significant constraint, suggesting that the college educated adults were able to see the way in which attitudes on certain issues are related together (e.g., defense build-up and federal budget cuts), while the less educated group tended to look at each issue separately, without regard to a similar or related issue. Logically, attitude and personality scales should be affected in parallel ways by age and education. In other words, the same notion of personal consistency is a relevant concern for both types of scales. In fact, many personality scales are just composed of a collection of attitude items (e.g., Rokeach's Dogmatism Scale). Therefore, it could also be true that less educated people tend to treat personal values and beliefs separately as well--which helps in explaining their lack of consistency between related statements on personality measures. However, as education increased, a more coherent and integrated value system may be developed, allowing more interrelatedness between similar statements.

Cattell and Beloff (1953) constructed an adolescent personality measure which was intended to parallel the adult

16 Personality Factor Questionnaire. One of the problems encountered by these authors was that after beginning with 218 items which were factored into 15 factors, the number of acceptable factors (i.e., factors with large variances, adequate split-half reliabilities, etc.) to be used in the final version of the test had dropped to five or six factors! Eventually, the authors allowed greater leniency in their selection process, ending up with a final total of 12 factors. It could be that inconsistent responses on the test, due to the age of the sample (from 10 to 13 years old), resulted in the decrease in strong, interpretable factors due to the presence of more random variance in the factors, and, therefore, less factor clarity.

Kohlberg's (1969) work on the development of moral character also supports our hypothesis of consistency. Kohlberg believes that each person moves up through the six stages of moral development and eventually settles into one primary stage upon which that person bases his or her moral thinking. Once this stage is found, the person will tend to develop greater consolidation (i.e., consistency) within that stage. In other words, the person begins to understand and react to situations in a more internally consistent way. Kohlberg also suggests that people who settle into higher stages of development will eventually show greater consolidation within that stage than will people in lower stages. However, the people who move into these higher stages will take longer to develop their high degree of consistency (and, therefore, will be older) than those people who remained at

the lower stages. In Figure 1, Subject A illustrates the development and consistency of a person who remains at the stage two level of moral thinking. Subject B illustrates the development and consistency of a person who moves up to the stage five level of moral thinking. The person in Subject B is higher, both in stage development and consistency, than the person in Subject A. This aspect of Kohlberg's moral development theory could explain, in part, the reason for the higher internal consistency in personality measures among older subjects.

#### A Secondary Analysis of a Previous Study

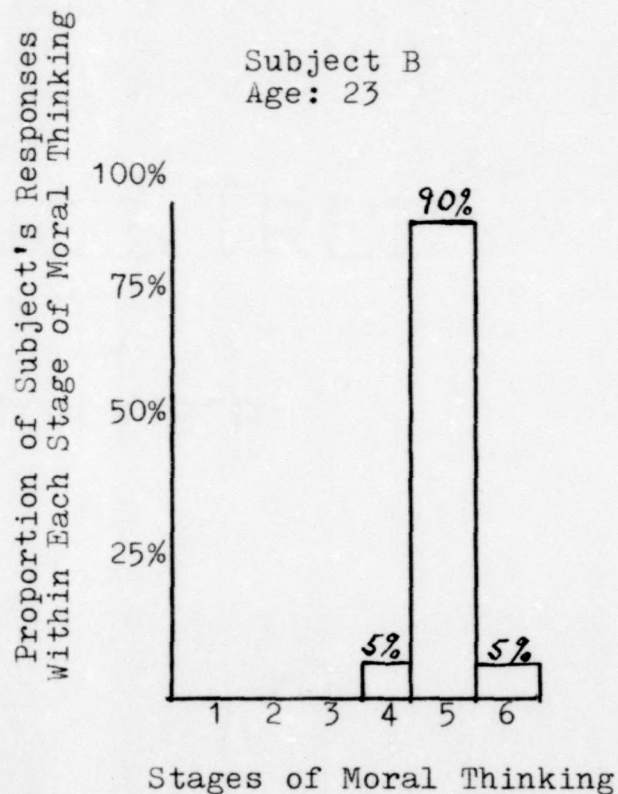
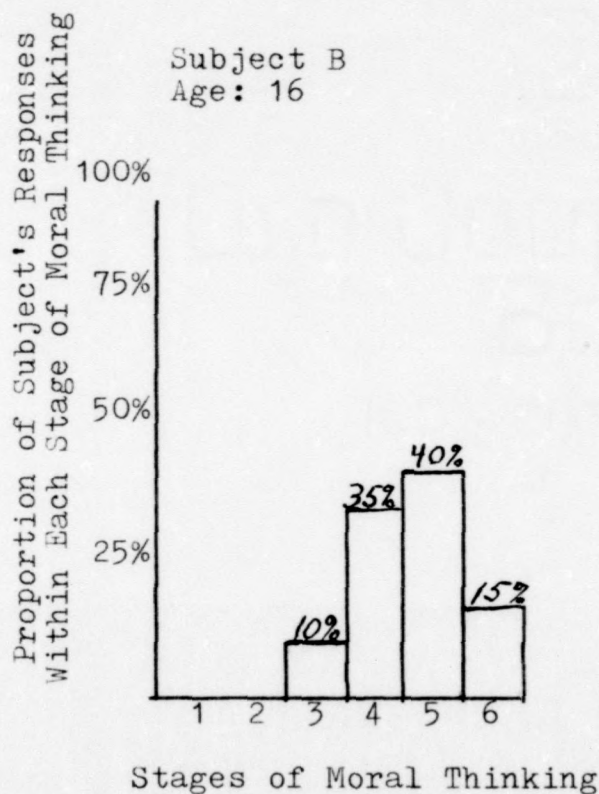
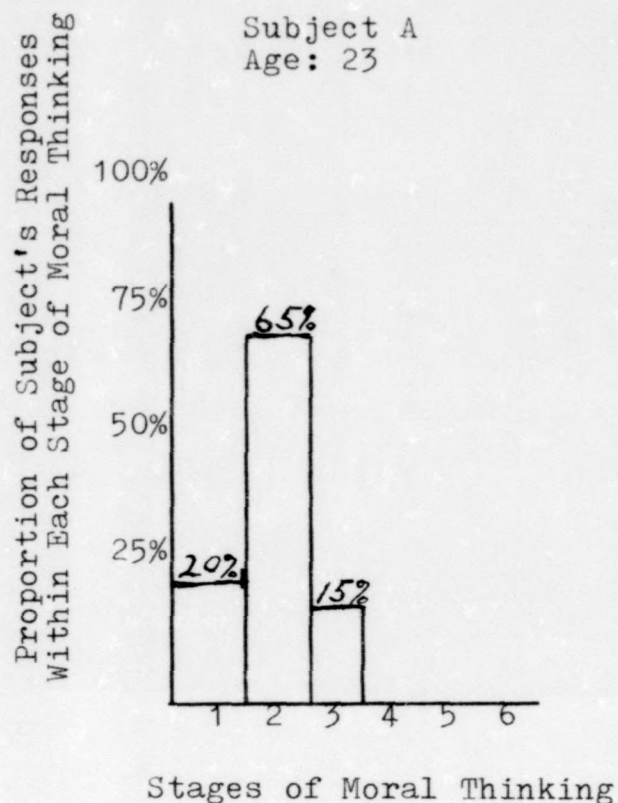
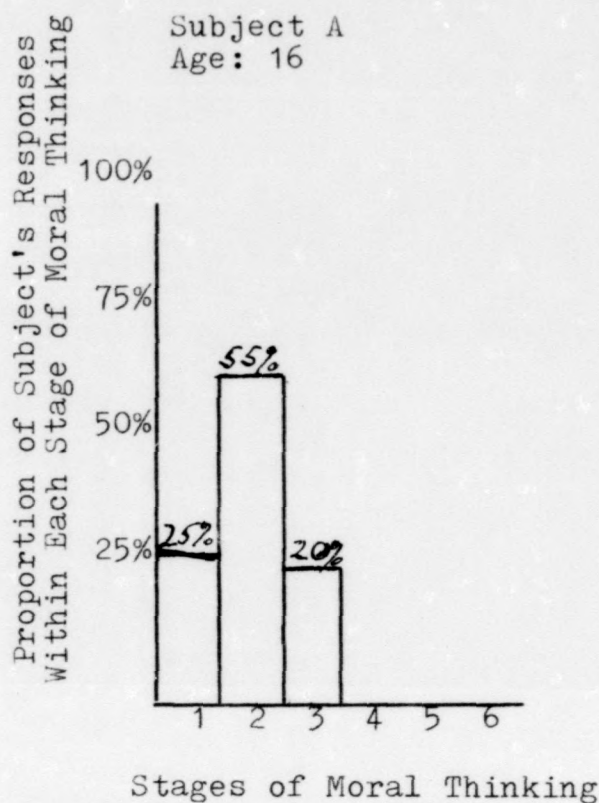
The data bank from a previous study that used a personality instrument and used a wide range of age and education groups in their sample was re-analyzed to see if any relationship between a subjects' response consistency on the personality measures and the age or education level of a subject could be found. The set of data came from Robert Holt's study (1980) which involved the development of national norms for Loevinger's Sentence Completion Tests of Ego Development. The total sample size of over 3,500 people between the ages of 16 and 25 included subjects with a variety of educational backgrounds at each age.

For our analysis, the subjects' scores were categorized into the following age groups: 16-17 year olds, 18-19 year olds, 20-21 year olds, 22-23 year olds, and 24-25 year olds. A coefficient alpha was computed for each age group's set of scores. As expected, there was an increase in the consistency of subjects' scores on Loevinger's measure within older



Figure 1

## An Example of Kohlberg's Theory of Moral Development



subjects: 16-17 year olds (.69), 18-19 year olds (.74), 20-21 year olds (.74), 22-23 year olds (.78), 24-25 year olds (.79). Of course, by looking at the data in this way, the effects of age and education upon consistency become confounded. Therefore, it would be helpful to look at different levels of education within an age group. With this point in mind, the scores of the 20-25 year olds were regrouped into four levels of education, and the coefficient alpha for each level was computed: less than two years of high school, .66 (n=166); three years of high school and high school graduate, .70 (n=322); some college education, .70 (n=68); college graduate and post-college education, .80 (n=37). These results are in agreement with our hypothesis of consistency. As education increases, so does the consistency of the subjects' responses to the personality measure.

#### Purpose of the Study

It is proposed that the degree of consistency which people demonstrate on measures of personality is positively related to the age and education levels of those people and that these relationships represent general phenomenon. If so, this general phenomenon could be due to a combination of several reasons. The language and sentence difficulty encountered by younger and less educated people may account for a part of the variance in response consistency. In addition, a subjects' degree of self-reflection (as measured by the Private Self-Consciousness Scale and the "How often do you think about this" items discussed later) may account for

a part of his or her degree of internal consistency on the scales. Self-reflection (which the author believes is an important component in the development of self-image as discussed in the introduction) may allow one to organize one's attitudes, values, and beliefs in a more coherent and consistent pattern. If younger and less educated people engage in self-reflection less often than older and more educated people, this could be a major factor in the proposed relationship between the age and education levels of people and their consistency in responding to personality measures.

The aims of the present study are twofold. The first is to determine the degree to which the relationships between age, education, and internal consistency are general phenomenon. The second is to examine the degree to which the general phenomenon may be explained by the language and sentence difficulty and the private self-reflection of the respondents.

The following hypotheses will be examined in the thesis:

1. The internal consistency (alpha) of personality scales will be a linear function of (a) the age of the respondents, and (b) the education level of the adult respondents.

2. Within each age group, and within each education level of the adult respondents, our measure of internal consistency<sup>2</sup> will be positively correlated across the scales.

3. The number of unrecognized words in each scale will be linearly related to (a) the age of the respondents, and (b) the education level of the adult respondents.



4. The number of statements in each personality scale which are not understood by the respondents will be linearly related to (a) the age of the respondents, and (b) the education level of the adult respondents.

5. When the number of unrecognized words and sentences not understood are controlled, the partial correlation between the age of the respondents and the internal consistency of each personality scale will remain significant.

6. When the number of unrecognized words and sentences not understood and the private self-consciousness measures are controlled, the partial correlation between the age of the respondents and the internal consistency of each personality scale will be nonsignificant.

7. When the number of unrecognized words and sentences not understood are controlled, the partial correlation between the education level of the adult respondents and the internal consistency of each personality scale will remain significant.

8. When the number of unrecognized words, sentences not understood, and the private self-consciousness measures are controlled, the partial correlation between the education level of the adult respondents and the internal consistency of each personality scale will be nonsignificant.

9. Within each age group, and within each education level of the adult respondents, private self-consciousness will be positively correlated with the subjects' internal consistency on the remaining personality scales.

10. None of the remaining personality scale scores will be positively correlated with the internal consistency on the

remaining scales, either overall or within specific sub-groups.

### Method

It was decided that the personality instruments to be used in this study should be among the most commonly used measures in the various fields of psychology. This approach would avoid the use of an arbitrary or random method of picking measures, and it would insure the interest of a wide range of readers who may use one or more of the instruments. Frequency counts of the Psychological Abstracts were used to determine the most frequently used personality measures in the 1960's, 1970's, and so far in the 1980's. The Manifest Anxiety Scale (Taylor, 1953) and the California F Scale (Adorno, Frenkel-Brunswik, Levinson, and Sanford, 1950) were the scales most used in 1960's research. The Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960), Rokeach's Dogmatism Scale (Rokeach, 1960), and an extraversion-intraversion subscale of the Eysenck Personality Inventory (Eaves and Eysenck, 1975) were the most used scales in the 1970's. Snyder's Self-Monitoring Scale (Snyder, 1974) was determined to be one of the more popular personality measures so far in this decade. An additional measure, the Private Self-Consciousness Scale (Fenigstein, Scheier, and Buss, 1975), was added because it appeared to be a better index of introspection, or self-reflection, than the Self-Monitoring Scale. Therefore, it may account for a large amount of the variance in response consistency due to age and education.

### Preparation of the Self-Exploration Questionnaire

The statements for all seven personality instruments were randomly mixed for one form of the "Self-Exploration Questionnaire" (Form A, 236 statements). The responses to each statement were in the form of a 5-point Likert scale, usually worded as 1=Completely Disagree, 2=Somewhat Disagree, 3=Uncertain, 4=Somewhat Agree, 5=Completely Agree. However, the Private Self-Consciousness Scale and the "How often do you think about this" questions required a different set of responses 1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Very Often.

A second form (Form B) was developed by taking the statements from the last half of Form A, re-randomizing them, and placing them in the first half of Form B. The statements from the first half of Form A were also re-randomized and were then placed in the last half of Form B. This procedure was designed to remove any artifact due to fatigue, boredom, or question order.

Four statements from each of the seven instruments were paired with the question "How often do you think about this?" (i.e., the previous statement). These questions were designed as another way of determining the relationship between self-reflection and internal consistency. The questions were matched with statements from the personality scales solely on the basis of whether or not the "how often" question made logical sense in its pairing with a particular statement. These "how often" questions were made into a separate scale of self-reflection by summing each subjects'



responses on these questions.

A cover sheet was placed on the front of each form, explaining the method of response to each statement. Each subject was also instructed to circle any word(s) in a statement which he or she did not understand and to place an "x" beside any statement which he or she did not understand. This procedure was followed to see if language or sentence difficulty was responsible for the inconsistent responses or whether it accounts for only a small amount of the variance in consistency due to age and education. Each form required the respondents to give their age and current grade level (or the highest grade achieved if the person was out of school). Throughout the questionnaire, the subjects were reminded of the specific responses to each statement by (a) placing the initials CD, SD, U, SA, CA on the top of each page and (b) by identifying each statement that required the responses Never, Rarely, Sometimes, Often, Very Often (see Appendix A for Form B of the questionnaire).

#### Data Collection

Students in social psychology and personality undergraduate classes at Western Kentucky University were used to distribute the questionnaire. Each participating student was asked to find at least one subject in each of four groups: high school freshmen, high school juniors, college freshmen, and college juniors.<sup>3</sup> They were also asked to find at least two subjects in a fifth group, adults between the ages of 21 and 25 with varied amounts of education (e.g., 10th grade education, high school graduate only, college graduate only,

etc.). The oversampling of adults was needed for an unfounded examination of the effects of education on internal consistency. The final distribution of our subjects was as follows: 96 high school freshmen, 106 high school juniors, 96 college freshmen, 104 college juniors, and 198 21-25 year olds with varied education, making a total of 600 subjects. This procedure for data collection has been used before (Stoltman, note 2) with results that suggested that the information used was not significantly different from the data which would have been collected in a more controlled setting.

#### Data Analysis

Hypothesis #1 was tested by computing alpha coefficients for each personality instrument for the five groups of subjects used for the questionnaire. The group of 21-25 year olds with varied amounts of education were split into three specific levels of education (i.e., high school graduate or less, some college education, college graduate and post-college education), and alpha coefficients were computed for each of these subgroups.

Hypothesis #2 was analyzed by taking the internal consistency scores of each subject, on each scale, summing for each subject within each age and education level, and computing the alpha reliabilities of these scores for each group.

One-way ANOVA's tested hypotheses #3 and #4 by determining the relationship between language or sentence difficulty and age or education. Partial correlations were computed to see (a) how much of the variance in the internal consistency

of subjects' responses was still unaccounted for, after language and sentence difficulty were taken out of the correlation and (b) how much more variance was left to be accounted for when the Self-Consciousness measures were partialled out of the correlation along with language and sentence difficulty. Hypotheses #5, #6, #7, and #8 were tested through this same procedure. Hypotheses #9 and #10 were tested by the appropriate correlations.

Descriptions of the Personality Instruments  
Which Make Up the Self-Exploration Questionnaire

The California F Scale was constructed to estimate one's antidemocratic tendencies at the personality level. An example is, "If people would talk less and work more, everybody would be better off." The F Scale went through several forms as the researchers attempted to increase its reliability and shorten its size, without losing its meaningfulness. The responses were in a 6-point Likert scale from "strong opposition" to "strong support." In its final form of 29 items, the reliability for the F Scale was above .80 for a variety of different samples.

The Manifest Anxiety Scale, which was originally designed for selecting subjects for experiments in human motivation, contains items which were picked from out of the Minnesota Multiphasic Personality Inventory. Various items, indicative of manifest anxiety, were taken out by judges and placed among a number of "non-anxiety" (or buffer) items. The scale was given to undergraduate students and the resulting distribution of scores was analyzed. An example from the scale is "I work



under a great deal of tension." Eventually, the scale was modified to the presently used form of 50 items. Scoring is in a yes-no format. Test-retest correlations for several groups of undergraduate psychology students were .82 for over a five-month period.

The Rokeach Dogmatism Scale was constructed to determine individual differences in general authoritarianism and general intolerance. The scale went through five revisions before ending up in its final form (Form E) of 40 items. An example of this scale is "It is better to be a dead hero than to be a live coward." Responses were in an agree-disagree format. The initial reliabilities for Form E tended to be in the .70's.

The Marlowe-Crowne Social Desirability Scale was developed to determine the degree to which subjects tend to respond in culturally-desirable ways. The items were selected from a population of culturally-approved behaviors which, nonetheless, are very unlikely to have actually occurred (e.g., "I have never intensely disliked anyone.") Items were also selected from a group of culturally-disapproved behaviors which are very likely to have occurred (e.g., "There have been occasions when I felt like smashing things.") The items were given to judges and scored in the appropriate direction of social desirability. Items of high inter-rater agreement were given to a sample of undergraduate students and the resulting scores were item analyzed to determine the degree of discrimination between high and low scores for each item. Responses to each item were in a true-false format. A KR-20

coefficient of .88 and a test-retest correlation of .89 were obtained for the final set of 33 items.

The Self-Monitoring Scale was developed to assess the degree to which people use the behaviors of others in social situations as guidelines to monitor their own appearance and behavior. An example is "I'm not always the person I appear to be." A number of statements (based upon definitions of self-monitoring activities) were administered to a sample of undergraduate students. An item analysis was conducted to maximize internal consistency. The responses used a 4-point Likert scale from "very true" to "not true at all." The final set of 25 items had a KR-20 coefficient of .70 and a test-retest reliability of .83.

The Private Self-Consciousness Scale is a part of the Self-Consciousness Scale, which also includes items on Public Self-Consciousness and Social Anxiety. The Self-Consciousness Scale was developed to determine individual differences in the degree in which one is conscious of, and reflective upon, one's own motives and thoughts. An example is "I reflect about myself a lot." Items were developed based upon a description of the defining classifications of self-consciousness. After collecting responses to these items by a sample of undergraduate students, a factor analysis revealed the three main factors of private self-consciousness, public self-consciousness, and social anxiety. Responses on the 10-item test are on a 5-point Likert scale from "extremely characteristic" to "extremely uncharacteristic." Test-retest correlations for a two-week interval were .79 for the

### Private Self-Consciousness Scale.

The extraversion-intraversion scale was taken from a study concerning the psychological development of twins. The study attempted to find the contributions of various genetical and environmental factors in the variation of extraversion. The 22 items in the scale were used within a larger measure consisting of 80 items. Responses were based on a yes-no format. No reliability data on the extraversion-intraversion scale was available from this study. An example of the scale is "Do other people think of you as being very lively?"

### Results

The primary hypothesis in this study, hypothesis #1, was given only limited support. As shown on Table 1, of the seven scales used, including an additional scale made up of the "How often do you think about this" statements, only three scales show evidence of a positive linear relationship between the internal consistency of the responses on the scales and the age levels of the total sample (i.e., the Private Self-Consciousness Scale, the Dogmatism Scale, and the Snyder Self-Monitoring Scale). Table 2 shows that only two of the scales (i.e., the California F Scale and the Dogmatism Scale) gave a positive linear relationship between internal consistency and the education level of the adult sample. The weak support given by these latter two scales, as well as the Dogmatism Scale in Table 1, is made even weaker due to the relatively high degree of reliability of the high school freshmen and high school educated scores on these



Table 1  
Alpha Reliabilities on the Personality Scales  
Across All of the Age Groups

Scale	Age Level				
	13-14	15-16	17-18	19-20	21-25 <sup>a</sup>
Manifest Anxiety	.82	.90	.88	.86	.89
Private Self-Consciousness	.55	.52	.66	.66	.74
Dogmatism	.73	.73	.69	.76	.82
Self-Monitoring	.52	.50	.60	.63	.65
Extraversion	.57	.56	.39	.47	.55
Social Desirability	.73	.73	.75	.71	.79
Authoritarianism	.78	.68	.73	.83	.77
"How Often"	.87	.89	.82	.86	.88

<sup>a</sup>College graduates and graduate students

Table 2  
Alpha Reliabilities on the Personality Scales  
Across the Education Levels in the Adult Sample

Scale	High School Grad or Less	Some College	College Grad and Graduate Students
Manifest Anxiety	.80	.78	.89
Private Self-Consciousness	.38	.36	.74
Dogmatism	.78	.79	.82
Self-Monitoring	.49	.40	.55
Extraversion	.62	.49	.65
Social Desirability	.70	.58	.79
Authoritarianism	.73	.74	.77
"How Often"	.81	.88	.88

scales. The remaining scales showed no initial evidence of support for hypothesis #1. Across the scales, however, the influence of the five above-mentioned scales can still be shown in the significant negative relationship between the education level of the adult sample and internal consistency,  $r = -.37$ ,  $p < .001$ , as well as between the age level of the total sample and internal consistency,  $r = -.23$ ,  $p < .001$ .

At this point, it should be demonstrated that the use of an individually-computed total of the standard deviations around the mean responses on each of the six scales (private self-consciousness excluded) was a valid procedure in calculating each internal consistency score. It could be argued that the use of each person's standard deviations around his or her mean responses on each scale as a measure of internal consistency would be influenced by the degree of response extremity. That is, the people whose mean scores are near the ends of a Likert Scale may show less variance than those people with scores around the middle range of the scale. For example, on a five-point scale, people whose mean response is a four are more limited in the amount of variance that they can show around the mean than people with a mean response of three. Therefore, people with extreme responses could receive an over-estimated internal consistency score. Since the relationship between the measure of internal consistency and response extremity is significant but small,  $r = .14$ ,  $p < .001$ , the author feels reasonably confident in using these standard deviations as a consistency measure rather than having to partial out extremity from each person's total standard

deviation score.

The evidence supporting hypothesis #2 was obtained by computing each subject's standard deviations around his or her mean responses on each of the seven scales within each education level in the total sample. By adding these seven standard deviation scales, each person received a total standard deviation score (i.e., the internal consistency measure). The consistency of these scores, within each education level, was then calculated with the use of alpha reliabilities. The alpha's were high for each level, ranging from .84 for the college graduates and graduate students to .92 for the college juniors. This high reliability between the standard deviations of the scales suggests that the subjects' degree of consistency is positively correlated across the personality scales. The use of the author's measure of internal consistency is further supported by this evidence of the measure's high reliability. Additional evidence for hypothesis #2 can also be derived from the highly significant intercorrelations,  $p < .001$ , of the standard deviations of the scales with each other in each education level. The median of these intercorrelations of the standard deviations was .51.

Limited support was found for both hypotheses #3 and #4. No significant linear relation was discovered between both unrecognized words and the age of the subjects,  $F(4,595) = .929$ ,  $p > .05$ , and sentences not understood and the age of the subjects,  $F(4,595) = .875$ ,  $p > .05$ . However, there was a significant linear relation between both unrecognized words



and the education level of the adult subjects,  $F(2,194) = 5.160$ ,  $p < .05$ , and sentences not understood and the education level of the adult subjects,  $F(2,194) = 6.516$ ,  $p < .05$ .

When the number of unrecognized words and sentences not understood were controlled (hypotheses #5 and #7), the data indicated that the partial correlations between the age of the subjects and their internal consistency,  $r = -.22$ ,  $p < .001$ , and the education level of the adult subjects and their internal consistency,  $r = -.33$ ,  $p < .001$ , remained highly significant. This supports hypotheses #5 and #7. However, when private self-consciousness scores were controlled as well as unrecognized words and sentences not understood (hypotheses #6 and #8), the partial correlations between the age of the subjects and their internal consistency,  $r = -.25$ ,  $p < .001$ , and the education level of the adult subjects and their internal consistency,  $r = -.33$ ,  $p < .001$ , did not become insignificant as predicted. Even when the effect of the "How often do you think about this" items were controlled, along with the previous three variables, the relationships between age and internal consistency,  $r = -.24$ ,  $p = .001$ , and the education level of the adult sample and internal consistency,  $r = -.37$ ,  $p < .001$ , remained significant. It seems that self-reflection, as measured by either the private self-consciousness scores or the "How often do you think about this" items, has no moderating effect on one's internal consistency, contrary to our expectations.

Hypothesis #9, that the private self-consciousness scores would have a significant positive correlation with

internal consistency at each age and education level, was not supported. Private self-consciousness was not correlated with the internal consistency measure over all subjects or within any of the age groups. Among the adult sample the relationship was significant only for the college graduate group.

Hypothesis #10 was largely supported. Of the six personality scales concerned with this hypothesis (private self-consciousness scores excluded), only the California F Scale,  $r = .16$ ,  $p < .05$ , and the Dogmatism Scale,  $r = .10$ ,  $p < .05$ , were significantly correlated with the consistency measure over all of the subjects. It should be noted that these two significant correlations are small. When the adult sample only was examined, none of the education groups were significantly correlated with the consistency measure,  $p < .05$ . It is a reasonable assumption that the two significant correlations could be attributed to a chance occurrence due to the large number of correlations used in testing this hypothesis.

#### Discussion

This study produced mixed support for the proposed relationship between our internal consistency measure and the age or education level of the subjects and negative results concerning the influence of self-reflection, unrecognized words, and sentences not understood as moderators of the relationship between internal consistency and age or education.

In regard to the moderators, none were correlated with the age of the subjects; and only the number of unrecognized

words and sentences not understood was correlated with education in the adult sample,  $\underline{r} = -.18$ ,  $\underline{p} < .01$  and  $\underline{r} = -.22$ ,  $\underline{p} = .001$ , respectively. However, they did not effect the relationship between education and internal consistency.

It is possible that a more controlled setting for this study would have been helpful in providing the opportunity to ensure that each of the subjects understood the importance of marking every unclear word and sentence. The present experiment hinged upon the conscientiousness of our student assistants in relaying all of the information needed by the subjects in order to properly answer our questionnaire. A large enough breakdown at this crucial step could have resulted in a significant discrepancy between the actual and reported number of unrecognized words and sentences not understood by the total sample. Even so, there is still some doubt as to whether this change would influence the above correlations in any meaningful way. Another possible moderator could be internal complexity. Perhaps those who score higher on such an index can more readily see the similarities of different situations as presented on personality measures and, therefore, respond in a more logically consistent way than those with less complexity.

It may be possible to explain the reason for the poor results concerning the proposed relationship between internal consistency and age or education. First, the total sample was broken up into its specific age groups (i.e., 13-14 year olds, 15-16 year olds, 17-18 year olds, 19-20 year olds, and 21-25 year olds), and the adult sample was divided into education



categories (i.e. high school education only, some college education, and college graduate or post-graduate education). Next, the mean standard deviations of each of the seven scales for each age or education group were computed. One-way ANOVA's were used in analyzing these age or education group differences with each scale. Group differences were also tested based upon the internal consistency measure.

As the two sets of the seven scales in Table 3 shows, 11 of the 14 scales revealed a significant linear decrease in the mean standard deviations of the scale scores between both the age and education groups. In other words, this data provides strong evidence for the positive relationship between the internal consistency of the subject's responses on the scales and the age and education levels of the subjects. The one-way ANOVA's also showed significant differences between both the age,  $F(4,475) = 6.59, p < .001$ , and education,  $F(2,194) = 12.21, p < .001$ , groups on the total internal consistency measure, with older or more educated subjects becoming more consistent in their responses. Omega Squares ( $\omega^2$ ) were calculated for these latter two ANOVA's, showing that age accounted for 4.47% of the differences in internal consistency for the overall sample, while education level accounted for 12% of the differences in internal consistency for the adult sample. The former percentage appears to be a small, yet significant factor, while the latter percentage indicates a crucial role for education as an influence on the internal consistency of responses. These data raise the possibility that the relationship between age

Table 3

A Chart of the Significant or Non-Significant Differences Between Either the Age Groups of the Overall Sample or the Education Groups of the Adult Sample in Terms of Their Total Mean Standard Deviations, As Well As Their Total Mean Standard Deviations on the Internal Consistency Measure

Scale	By Age Group		Scale	By Education Group	
	Age Group	Mean Standard Deviation		Education Group	Mean Standard Deviation
Manifest Anxiety**	13-14	1.320	Manifest Anxiety**	high school	1.308
	15-16	1.283		some college	1.231
	17-18	1.254		college grad	1.166
	19-20	1.219			
	21-25	1.166			
Private Self-Consciousness*	13-14	1.067	Private Self-Consciousness**	high school	1.129
	15-16	1.036		some college	.994
	17-18	.984		college grad	.945
	19-20	1.016			
	21-25	.945			
Dogmatism	Non-Significant		Dogmatism**	high school	1.248
				some college	1.182
				college grad	1.101
Self-Monitoring**	13-14	1.280	Self-Monitoring**	high school	1.286
	15-16	1.269		some college	1.210
	17-18	1.193		college grad	1.120
	19-20	1.183			
	21-25	1.120			

Table 3--Continued

Scale	By Age Group		Scale	By Education Group	
	Age Group	Mean Standard Deviation		Education Group	Mean Standard Deviation
Extraversion**	13-14	1.204	Extraversion**	high school	1.182
	15-16	1.181		some college	1.117
	17-18	1.120		college grad	1.037
	19-20	1.113			
	21-25	1.037			
Social** Desirability	13-14	1.293	Social** Desirability	high school	1.318
	15-16	1.293		some college	1.257
	17-18	1.257		college grad	1.176
	19-20	1.238			
	21-25	1.176			
Authoritarianism	Non-Significant		Authoritarianism**	high school	1.249
				some college	1.187
				college grad	1.121
Internal** Consistency	13-14	7.492	Internal** Consistency	high school	7.591
	15-16	7.382		some college	7.185
	17-18	7.242		college grad	6.721
	19-20	7.076			
	21-25	6.721			

\*  $p < .05$ \*\*  $p < .001$



and education with internal consistency was present in this study, but not to a degree strong enough to affect the alpha reliabilities of the personality scales in Table 1.

The following points address at least one reason why our hypothesized relationship was not stronger, as well as several other points which should be mentioned:

1) It is possible that a different methodology, such as a test-retest situation over a series of time intervals, could give a more accurate estimate of the role age and education in determining the reliability of a personality scale. A good example is the Johansson and Campbell study (1971), which varied the age of the subjects during the initial testing period and the length of the time interval before the second testing period. Johansson and Campbell did find a stronger relationship between the test-retest correlations of scale scores and age in their study; and with several improvements, such as a clear look at the separate influences of age and education and a more complete set of data on a variety of personality scales, this methodology could give more definite answers regarding this line of research.

2) Why continue this line of research? Both the limited support provided by this study and the possible improvements in methodology offered by the Johansson and Campbell study suggests that more work should be done concerning this issue. Some of the implications of this research have already been mentioned earlier, but those are certainly not the limits of the relevancy of this issue. For example, those who are involved in personnel selection in both government and

industry tend to combine job applicants in groups without regard to age and education when using personality or attitudes scales as part of the selection process. Our results showed the strongest relationship to be between education and internal consistency,  $r = -.37$ ,  $p < .001$ . If future studies give similar evidence for this relationship, a test which is valid for a group of job applicants measured as a whole may be a less reliable measure for a particular age or education level, and, therefore, less valid (or even invalid) as a predictor of their success on the job. Not only would this result in a test with poor utility, but possible discrimination suits as well.

3) Is consistency an independent construct? The results of this study seems to support earlier work (Parker, 1971) which suggests considering internal consistency as a separate trait or construct. When controlling for a number of variables in the partial correlation between our consistency measure and age or education (i.e. unrecognized words, sentences not understood, private self-consciousness scores, and "How often do you think about this" scores), none of them seemed to have any moderating effect upon the correlation.

The present study should be considered as the initial results to an important line of research in the area of personality measurement. With methodological improvements, including the ones mentioned here, the true influence of factors such as age and education upon internal consistency, in addition to any moderator variables, will be discovered.

## Appendix A

### Self-Exploration Questionnaire

The following questionnaire explores many aspects of your feelings and beliefs. Read each statement carefully and mark the response which most accurately describes your feelings. Most of the responses vary on the following 5-point scale:

- 1=Completely Disagree (CD)
- 2=Somewhat Disagree (SD)
- 3=Uncertain (U)
- 4=Somewhat Agree (SA)
- 5=Completely Agree (CA)

A few statements require a different set of responses, ranging from "Never" to "Very Often" on a 5-point scale. These statements and their exact responses are identified in the questionnaire. A few more statements are used to see how often you think about the previous statement. The responses to these statements are also on a 5-point scale ranging from "Never" to "Very Often." Example:

- 1 2 3 4 5    1. I am quiet around other people.
- 1 2 3 4 5    2. How often do you think about this (Statement #1)? (1=Never; 2=Rarely; 3=Sometimes; 4=Often; 5=Very Often)

If you do not understand a particular word, answer the statement as best you can and circle that word. Example:

- 1 2 3 4 5    1. Large groups make me (anxious).

If you do not understand a particular statement, answer the statement as best you can and place an "x" next to that statement. Example:

- 1 2 3 4 5 X 1. Young people should not have too easy access to books which are likely to confuse them.

It is important that you read each statement carefully and answer every statement as honestly as possible.

Please give the following information:

Age \_\_\_\_\_ Current Grade Level (or highest level achieved if you are out of school) \_\_\_\_\_



CD DS U SA CA

- 1 2 3 4 5 1. No matter who I'm talking to, I'm always a good listener.
- 1 2 3 4 5 2. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.
- 1 2 3 4 5 3. I can look anyone in the eye and tell a lie with a straight face (if for a right end).
- 1 2 3 4 5 4. There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.
- 1 2 3 4 5 5. I worry quite a bit over possible misfortunes.
- 1 2 3 4 5 6. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.
- 1 2 3 4 5 7. I have been afraid of things or people that I know could not hurt me.
- 1 2 3 4 5 8. At times I have really insisted on having things my own way.
- 1 2 3 4 5 9. It is better to be a dead hero than to be a live coward.
- 1 2 3 4 5 10. I guess I put on a show to impress or entertain people.
- 1 2 3 4 5 11. How often do you think about this (Statement #10)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 12. Science has its place, but there are many important things that can never be understood by the human mind.
- 1 2 3 4 5 13. My blood boils whenever a person stubbornly refuses to admit he's wrong.
- 1 2 3 4 5 14. How often do you think about this (Statement #13)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 15. On a few occasions, I have given up doing something because I thought too little of my ability.
- 1 2 3 4 5 16. I blush no more often than others.

CD SD U SA CA

- 1 2 3 4 5 17. I would not change my opinions (or the way I do things) in order to please someone else or win their favor.
- 1 2 3 4 5 18. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.
- 1 2 3 4 5 19. Generally, I'm not very aware of myself.
- 1 2 3 4 5 20. Fundamentally, the world we live in is a pretty lonesome place.
- 1 2 3 4 5 21. I rarely need the advice of my friends to choose movies, books, or music.

Statements #22, 23, and 24 use the following responses: (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)

- 1 2 3 4 5 22. If there is something you want to know about, would you rather look it up in a book than talk to someone about it?
- 1 2 3 4 5 23. Would you do almost anything for a date?
- 1 2 3 4 5 24. Can you usually let yourself go and enjoy yourself a lot at a gay party?
- 1 2 3 4 5 25. I have diarrhea once a month or more.
- 1 2 3 4 5 26. In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.
- 1 2 3 4 5 27. In times like these, a person must be pretty selfish if he considers primarily his own happiness.
- 1 2 3 4 5 28. I sometimes think when people have a misfortune they only got what they deserved.
- 1 2 3 4 5 29. I have nightmares every few nights.
- 1 2 3 4 5 30. I am inclined to take things hard.
- 1 2 3 4 5 31. On occasion I have had doubts about my ability to succeed in life.
- 1 2 3 4 5 32. How often do you think about this (Statement #31)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)

CD SD U SA CA

- 1 2 3 4 5 33. I feel hungry almost all the time.
- 1 2 3 4 5 34. How often do you think about this (Statement #33)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 35. I wish I could be as happy as others seem to be.
- 1 2 3 4 5 36. Life is a strain for me much of the time.
- 1 2 3 4 5 37. Nowadays more and more people are prying into matters that should remain personal and private.
- 1 2 3 4 5 38. No weakness or difficulty can hold us back if we have enough will power.
- Statements #39, 40, and 41 use the following responses: (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 39. Do you prefer to have few but special friends?
- 1 2 3 4 5 40. Do you like doing things in which you have to act quickly?
- 1 2 3 4 5 41. Do you stop and think things over before doing anything?
- 1 2 3 4 5 42. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare.
- 1 2 3 4 5 43. I reflect about myself a lot.
- 1 2 3 4 5 44. I have considered being an entertainer.
- 1 2 3 4 5 45. I believe I am no more nervous than most others.
- 1 2 3 4 5 46. The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.
- 1 2 3 4 5 47. The United States and Russia have just about nothing in common.
- 1 2 3 4 5 48. Human nature being what it is, there will always be war and conflict.



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- 1 2 3 4 5 49. How often do you think about this (Statement #48)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 50. I sometimes feel resentful when I don't get my way.
- 1 2 3 4 5 51. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on.
- 1 2 3 4 5 52. I never scrutinize myself.
- 1 2 3 4 5 53. Man on his own is a helpless and miserable creature.
- 1 2 3 4 5 54. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.
- 1 2 3 4 5 55. Nobody ever learned anything really important except through suffering.
- 1 2 3 4 5 56. I have trouble changing my behavior to suit different people and different situations.
- 1 2 3 4 5 57. A person who thinks primarily of his own happiness is beneath contempt.
- 1 2 3 4 5 58. Before voting I thoroughly investigate the qualifications of all the candidates.
- 1 2 3 4 5 59. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.
- 1 2 3 4 5 60. There have been occasions when I felt like smashing things.
- 1 2 3 4 5 61. How often do you think about this (Statement #60)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 62. Homosexuals are hardly better than criminals and ought to be severely punished.
- 1 2 3 4 5 63. Familiarity breeds contempt.
- 1 2 3 4 5 64. I have never felt that I was punished without cause.

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- 1 2 3 4 5 65. Are you usually carefree? (1=Never; 2=Rarely; 3=Sometimes; 4=Often; 5=Very Often)
- 1 2 3 4 5 66. I am easily embarrassed.
- 1 2 3 4 5 67. I feel a bit awkward in company and do not show up quite as well as I should.
- 1 2 3 4 5 68. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs.
- 1 2 3 4 5 69. I feel anxiety about something or someone almost all the time.
- 1 2 3 4 5 70. I certainly feel useless at times.
- 1 2 3 4 5 71. I have had periods in which I lost sleep over worry.
- 1 2 3 4 5 72. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."
- 1 2 3 4 5 73. I have very few fears compared to my friends.
- 1 2 3 4 5 74. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.
- 1 2 3 4 5 75. How often do you think about this (Statement #74)? (1=Never; 2=Rarely; 3=Sometimes; 4=Often; 5=Very Often)
- 1 2 3 4 5 76. In order to get along and be liked, I tend to be what people expect me to be rather than anything else.
- 1 2 3 4 5 77. I would probably make a good actor.
- 1 2 3 4 5 78. It is sometimes hard for me to go on with my work if I am not encouraged.
- 1 2 3 4 5 79. I sometimes feel that I am about to go to pieces.
- 1 2 3 4 5 80. If I could get into a movie without paying and be sure I was not seen, I would probably do it.
- 1 2 3 4 5 81. My table manners at home are as good as when I eat out in a restaurant.
- 1 2 3 4 5 82. I laugh more when I watch a comedy with others than when alone.

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- 1 2 3 4 5 83. I am happy most of the time.
- 1 2 3 4 5 84. How often do you think about this (Statement #83)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 85. I am more sensitive than most other people.
- 1 2 3 4 5 86. The businessman and the manufacturer are much more important to society than the artist and the professor.
- 1 2 3 4 5 87. If given the chance I would do something of great benefit to the world.
- 1 2 3 4 5 88. I'm alert to changes in my mood.
- 1 2 3 4 5 89. How often do you think about this (Statement #88)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 90. I am a high-strung person.
- 1 2 3 4 5 91. I must admit that I have at times been worried beyond reason over something that really did not matter.
- 1 2 3 4 5 92. I frequently notice my hand shakes when I try to do something.
- 1 2 3 4 5 93. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.
- 1 2 3 4 5 94. Sometimes when embarrassed, I break out in a sweat which annoys me greatly.
- 1 2 3 4 5 95. Every person should have complete faith in some supernatural power whose decisions he obeys without question.
- 1 2 3 4 5 96. I always try to practice what I preach.
- 1 2 3 4 5 97. I am usually calm and not easily upset.
- 1 2 3 4 5 98. I worry over money and business.
- 1 2 3 4 5 99. I never make a long trip without checking the safety of my car.
- 1 2 3 4 5 100. I sweat very easily even on cool days.



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- 1 2 3 4 5 101. It is only natural for a person to be rather fearful of the future.
- 1 2 3 4 5 102. I'm not always the person I appear to be.
- 1 2 3 4 5 103. I have very few headaches.
- 1 2 3 4 5 104. I would never think of letting someone else be punished for my wrongdoings.
- 1 2 3 4 5 105. I'm always trying to figure myself out.
- 1 2 3 4 5 106. How often do you think about this (Statement #105)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 107. I'm aware of the way my mind works when I work through a problem.
- 1 2 3 4 5 108. I have almost never felt the urge to tell someone off.
- Statements #109, 110, 111, and 112 use the following responses: (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 109. Do you often do things on the spur of the moment?
- 1 2 3 4 5 110. How often do you think about this (Statement #109)?
- 1 2 3 4 5 111. Can you easily get some life into a rather dull party?
- 1 2 3 4 5 112. Do you like going out a lot?
- 1 2 3 4 5 113. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.
- 1 2 3 4 5 114. There have been times when I felt like rebelling against people in authority even though I knew they were right.
- 1 2 3 4 5 115. The present is all too often full of unhappiness. It is only the future that counts.
- 1 2 3 4 5 116. I am not particularly good at making other people like me.
- 1 2 3 4 5 117. How often do you think about this (Statement #116)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 118. I have sometimes felt that difficulties were piling up so high that I could not overcome them.
- 1 2 3 4 5 119. I dream frequently about things that are best kept to myself.
- 1 2 3 4 5 120. No sane, normal, decent person could ever think of hurting a close friend or relative.

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- 1 2 3 4 5 121. Sometimes I become so excited that I find it hard to get to sleep.
- 1 2 3 4 5 122. How often do you think about this (Statement #121)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 123. I do not tire quickly.
- 1 2 3 4 5 124. I'm generally attentive to my inner feelings.
- 1 2 3 4 5 125. How often do you think about this (Statement #124)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 126. I am always courteous, even to people who are disagreeable.
- 1 2 3 4 5 127. How often do you think about this (Statement #126)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 128. I am certainly lacking in self-confidence.
- 1 2 3 4 5 129. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.
- 1 2 3 4 5 130. I am often afraid that I am going to blush.
- 1 2 3 4 5 131. I never resent being asked to return a favor.

Statements #132, 133, 134, and 135 use the following responses: (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)

- 1 2 3 4 5 132. Do you suddenly feel shy when you want to talk to an attractive stranger?
- 1 2 3 4 5 133. How often do you think about this (Statement #132)?
- 1 2 3 4 5 134. Do you generally say things quickly without stopping to think?
- 1 2 3 4 5 135. Do you like talking to people so much that you never miss a chance of talking to a stranger?
- 1 2 3 4 5 136. The true American way of life is disappearing so fast that force may be necessary to preserve it.

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- 1 2 3 4 5 137. I am sometimes irritated by people who ask favors of me.
- 1 2 3 4 5 138. An insult to our honor should always be punished.
- 1 2 3 4 5 139. I sometimes appear to others to be experiencing deeper emotions than I actually am.
- 1 2 3 4 5 140. I frequently find myself worrying about something.
- Statements #141, 142, 143, and 144 use the following responses: (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 141. Are you slow and unhurried in the way you move?
- 1 2 3 4 5 142. When people shout at you, do you shout back?
- 1 2 3 4 5 143. Would you be unhappy if you could not see lots of people most of the time?
- 1 2 3 4 5 144. How often do you think about this (Statement #143)?
- 1 2 3 4 5 145. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.
- 1 2 3 4 5 146. How often do you think about this (Statement #145)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 147. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.
- 1 2 3 4 5 148. I am very seldom troubled by constipation.
- 1 2 3 4 5 149. People can be divided into two distinct classes: the weak and the strong.
- 1 2 3 4 5 150. There are a number of people I have come to hate because of the things they stand for.
- 1 2 3 4 5 151. I work under a great deal of tension.
- 1 2 3 4 5 152. My sleep is fitful and disturbed.



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- 1 2 3 4 5 153. I like to gossip at times.
- 1 2 3 4 5 154. My hands and feet are usually warm enough.
- 1 2 3 4 5 155. I'm often the subject of my own fantasies.
- 1 2 3 4 5 156. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.
- 1 2 3 4 5 157. When I am uncertain how to act in a social situation, I look to the behavior of others for cues.
- 1 2 3 4 5 158. Some people are born with an urge to jump from high places.
- 1 2 3 4 5 159. I can remember "playing sick" to get out of something.
- 1 2 3 4 5 160. I can make impromptu speeches even on topics about which I have almost no information.
- 1 2 3 4 5 161. I cry easily.
- 1 2 3 4 5 162. I am entirely self-confident.
- 1 2 3 4 5 163. I have a great deal of stomach trouble.
- 1 2 3 4 5 164. I never hesitate to go out of my way to help someone in trouble.
- 1 2 3 4 5 165. How often do you think about this (Statement #164)? (1=Never; 2=Rarely; 3=Sometimes; 4=Often; 5=Very Often)
- 1 2 3 4 5 166. I find it hard to imitate the behavior of other people.
- 1 2 3 4 5 167. Some day it will probably be shown that astrology can explain a lot of things.
- 1 2 3 4 5 168. I sometimes try to get even, rather than forgive and forget.
- 1 2 3 4 5 169. I don't find it particularly difficult to get along with loud-mouthed, obnoxious people.
- 1 2 3 4 5 170. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.

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- 1 2 3 4 5 171. How often do you think about this (Statement #170)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)

Statements #172, 173, 174, and 175 use the following responses: (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)

- 1 2 3 4 5 172. Are you mostly quiet when you are with other people?
- 1 2 3 4 5 173. How often do you think about this (Statement #172)?
- 1 2 3 4 5 174. Do you hate being with a crowd who play jokes on one another?
- 1 2 3 4 5 175. Do you find it hard to really enjoy yourself at a lively party?
- 1 2 3 4 5 176. I have periods of such great restlessness that I cannot sit for long in a chair.
- 1 2 3 4 5 177. I'm always willing to admit it when I make a mistake.
- 1 2 3 4 5 178. I can only argue for ideas which I already believe.
- 1 2 3 4 5 179. When I don't know something I don't at all mind admitting it.
- 1 2 3 4 5 180. At a party I let others keep the jokes and stories going.
- 1 2 3 4 5 181. Sex crimes such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be publically whipped, or worse.
- 1 2 3 4 5 182. I am usually self-conscious.
- 1 2 3 4 5 183. I have never intensely disliked anyone.
- 1 2 3 4 5 184. I cannot keep my mind on one thing.
- 1 2 3 4 5 185. I'm constantly examining my motives.
- 1 2 3 4 5 186. How often do you think about this (Statement #185)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 187. Most people just don't know what's good for them.

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- 1 2 3 4 5 188. At times I think I am no good at all.
- 1 2 3 4 5 189. How often do you think about this (Statement #188)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 190. It makes me nervous to have to wait.
- 1 2 3 4 5 191. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.
- 1 2 3 4 5 192. Wars and social troubles may someday be ended by an earthquake or flood or fire that will destroy the whole world.
- 1 2 3 4 5 193. I am always careful about my manner of dress.
- 1 2 3 4 5 194. Most people don't realize how much our lives are controlled by plots in secret places.
- 1 2 3 4 5 195. Obedience and respect for authority are the most important virtues children should learn.
- 1 2 3 4 5 196. How often do you think about this (Statement #195)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 197. Of all the different philosophies which exist in this world, there is probably only one which is correct.
- 1 2 3 4 5 198. I practically never blush.
- 1 2 3 4 5 199. I hardly ever notice my heart pounding and I am seldom short of breath.
- 1 2 3 4 5 200. There are two kinds of people in this world: those who are for the truth and those who are against the truth.
- 1 2 3 4 5 201. There have been times when I was quite jealous of the good fortune of others.
- 1 2 3 4 5 202. A group which tolerates too much differences of opinion among its own members cannot exist for long.



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- 1 2 3 4 5 203. It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes.
- 1 2 3 4 5 204. Even if I am not enjoying myself, I often pretend to be having a good time.
- 1 2 3 4 5 205. Most people just don't give a "damn" for others.
- 1 2 3 4 5 206. How often do you think about this (Statement #205)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 207. I may deceive people by being friendly when I really dislike them.
- 1 2 3 4 5 208. How often do you think about this (Statement #207)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- Statements #209, 210, and 211 use the following responses: (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 209. Generally, do you prefer reading to meeting people?
- 1 2 3 4 5 210. Do you often long for excitement?
- 1 2 3 4 5 211. Do other people think of you as being very lively?
- 1 2 3 4 5 212. At parties and social gatherings, I do not attempt to do or say things that others will like.
- 1 2 3 4 5 213. In different situations and with different people, I often act like very different persons.
- 1 2 3 4 5 214. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked, and feeble-minded people.
- 1 2 3 4 5 215. A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person.
- 1 2 3 4 5 216. In the history of mankind there have probably been just a handful of really great thinkers.

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- 1 2 3 4 5 217. I have never deliberately said something that hurt someone's feelings.
- 1 2 3 4 5 218. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.
- 1 2 3 4 5 219. There have been occasions when I took advantage of someone.
- 1 2 3 4 5 220. A man who does not believe in some great cause has not really lived.
- 1 2 3 4 5 221. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.
- 1 2 3 4 5 222. What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.
- 1 2 3 4 5 223. I am troubled by attacks of nausea.
- 1 2 3 4 5 224. Once I get wound up in a heated discussion I just can't stop.
- 1 2 3 4 5 225. There is so much to be done and so little time to do it in.
- 1 2 3 4 5 226. If people would talk less and work more, everybody would be better off.
- 1 2 3 4 5 227. I'd like it if I could find someone who would tell me how to solve my personal problems.
- 1 2 3 4 5 228. In a group of people I am rarely the center of attention.
- 1 2 3 4 5 229. How often do you think about this (Statement #228)? (1=Never;2=Rarely;3=Sometimes;4=Often;5=Very Often)
- 1 2 3 4 5 230. I have never been good at games like charades or improvisational acting.
- 1 2 3 4 5 231. I have never been irked when people expressed ideas very different from my own.
- 1 2 3 4 5 232. I sometimes have the feeling that I'm off somewhere watching myself.
- 1 2 3 4 5 233. I shrink from facing a crisis or difficulty.

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1 2 3 4 5 234. The main thing in life is for a person  
to want to do something important.

1 2 3 4 5 235. The worst crime a person could commit is  
to attack publicly the people who believe  
in the same thing he does.

1 2 3 4 5 236. I find it hard to keep my mind on a  
task or job.



### Reference Notes

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### Footnotes

<sup>1</sup>At the time of this writing, a copy of the Coopersmith Self-Esteem Inventory could not be obtained in order to try to determine a possible explanation for the results of the Spatz and Johnston study.

<sup>2</sup>For each subject, the standard deviations around the means of their responses on each of the six scales (private self-consciousness excluded) were computed. These six standard deviations were added together to form a score of each subject's total variance around their mean response on the scales.

<sup>3</sup>It is realized that the use of this particular group of subjects results in a perfect confound of age and education. However, these subjects will hereafter be referred to as "age" to distinguish them from the adult sample, referred to as "education."